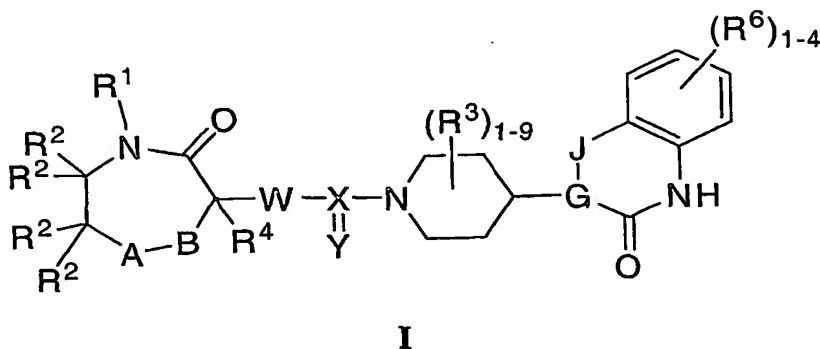


WHAT IS CLAIMED IS:

1. A compound of the formula I:



5 wherein:

A is a bond,  $C(R^2)_2$ , O,  $S(O)_m$  or  $NR^2$ ;

B is  $(C(R^2)_2)_n$ ;

10

$R^1$  is selected from:

- 1) H,  $C_1$ - $C_6$  alkyl,  $C_2$ - $C_6$  alkenyl,  $C_2$ - $C_6$  alkynyl,  $C_3$ -6 cycloalkyl, and heterocycle, unsubstituted or substituted with one or more substituents independently selected from:
  - a)  $C_1$ -6 alkyl,
  - b)  $C_3$ -6 cycloalkyl,
  - c) aryl, unsubstituted or substituted with 1-5 substituents where the substituents are independently selected from  $R^4$ ,
  - d) heteroaryl, unsubstituted or substituted with 1-5 substituents where the substituents are independently selected from  $R^4$ ,
  - e) heterocycle, unsubstituted or substituted with 1-5 substituents where the substituents are independently selected from  $R^4$ ,
  - f)  $(F)_p C_{1-3}$  alkyl,

- g) halogen,
- h)  $OR^4$ ,
- i)  $O(CH_2)_s OR^4$ ,
- j)  $CO_2R^4$ ,
- 5 k)  $(CO)NR^{10}R^{11}$ ,
- l)  $O(CO)NR^{10}R^{11}$ ,
- m)  $N(R^4)(CO)NR^{10}R^{11}$ ,
- n)  $N(R^{10})(CO)R^{11}$ ,
- o)  $N(R^{10})(CO)OR^{11}$ ,
- 10 p)  $SO_2NR^{10}R^{11}$ ,
- q)  $N(R^{10})SO_2R^{11}$ ,
- r)  $S(O)_mR^{10}$ ,
- s)  $CN$ ,
- t)  $NR^{10}R^{11}$ ,
- 15 u)  $N(R^{10})(CO)NR^4R^{11}$ , and
- v)  $O(CO)R^4$ ; and

2) aryl or heteroaryl, unsubstituted or substituted with one or more substituents independently selected from:

- 20 a)  $C_{1-6}$  alkyl,
- b)  $C_{3-6}$  cycloalkyl,
- c) aryl, unsubstituted or substituted with 1-5 substituents where the substituents are independently selected from  $R^4$ ,
- d) heteroaryl, unsubstituted or substituted with 1-5 substituents
- 25 where the substituents are independently selected from  $R^4$ , e)
- heterocycle, unsubstituted or substituted with 1-5 substituents where the substituents are independently selected from  $R^4$ , f)  $(F)_pC_{1-3}$  alkyl,
- g) halogen,
- h)  $OR^4$ ,
- 30 i)  $O(CH_2)_sOR^4$ ,
- j)  $CO_2R^4$ ,
- k)  $(CO)NR^{10}R^{11}$ ,
- l)  $O(CO)NR^{10}R^{11}$ ,
- m)  $N(R^4)(CO)NR^{10}R^{11}$ ,

- n)  $N(R^{10})(CO)R^{11}$ ,
- o)  $N(R^{10})(CO)OR^{11}$ ,
- p)  $SO_2NR^{10}R^{11}$ ,
- q)  $N(R^{10})SO_2R^{11}$ ,
- 5 r)  $S(O)_mR^{10}$ ,
- s)  $CN$ ,
- t)  $NR^{10}R^{11}$ ,
- u)  $N(R^{10})(CO)NR^4R^{11}$ , and
- v)  $O(CO)R^4$ ; and

10  $R^2$  is independently selected from:

- 1)  $H$ ,  $C_0$ - $C_6$  alkyl,  $C_2$ - $C_6$  alkenyl,  $C_2$ - $C_6$  alkynyl,  $C_3$ - $C_6$  cycloalkyl and heterocycle, unsubstituted or substituted with one or more substituents independently selected from:

- 15 a)  $C_{1-6}$  alkyl,
- b)  $C_{3-6}$  cycloalkyl,
- c) aryl, unsubstituted or substituted with 1-5 substituents where the substituents are independently selected from  $R^4$ ,
- 20 d) heteroaryl, unsubstituted or substituted with 1-5 substituents where the substituents are independently selected from  $R^4$ ,
- e) heterocycle, unsubstituted or substituted with 1-5 substituents where the substituents are independently selected from  $R^4$ , f)

(F) $pC_{1-3}$  alkyl,

- 25 g) halogen,
- h)  $OR^4$ ,
- i)  $O(CH_2)_sOR^4$ ,
- j)  $CO_2R^4$ ,
- k)  $(CO)NR^{10}R^{11}$ ,
- l)  $O(CO)NR^{10}R^{11}$ ,
- 30 m)  $N(R^4)(CO)NR^{10}R^{11}$ ,
- n)  $N(R^{10})(CO)R^{11}$ ,
- o)  $N(R^{10})(CO)OR^{11}$ ,
- p)  $SO_2NR^{10}R^{11}$ ,
- q)  $N(R^{10})SO_2R^{11}$ ,

- r)  $S(O)_mR^{10}$ ,
- s) CN,
- t)  $NR^{10}R^{11}$ ,
- u)  $N(R^{10})(CO)NR^4R^{11}$ , and
- v)  $O(CO)R^4$ ; and

2) aryl or heteroaryl, unsubstituted or substituted with one or more substituents independently selected from:

- a)  $C_{1-6}$  alkyl,
- b)  $C_{3-6}$  cycloalkyl,
- c) aryl, unsubstituted or substituted with 1-5 substituents where the substituents are independently selected from  $R^4$ ,
- d) heteroaryl, unsubstituted or substituted with 1-5 substituents where the substituents are independently selected from  $R^4$ ,
- e) heterocycle, unsubstituted or substituted with 1-5 substituents where the substituents are independently selected from  $R^4$ ,
- f)  $(F)_pC_{1-3}$  alkyl,
- g) halogen,
- h)  $OR^4$ ,
- i)  $O(CH_2)_sOR^4$ ,
- j)  $CO_2R^4$ ,
- k)  $(CO)NR^{10}R^{11}$ ,
- l)  $O(CO)NR^{10}R^{11}$ ,
- m)  $N(R^4)(CO)NR^{10}R^{11}$ ,
- n)  $N(R^{10})(CO)R^{11}$ ,
- o)  $N(R^{10})(CO)OR^{11}$ ,
- p)  $SO_2NR^{10}R^{11}$ ,
- q)  $N(R^{10})SO_2R^{11}$ ,
- r)  $S(O)_mR^{10}$ ,
- s) CN,
- t)  $NR^{10}R^{11}$ ,
- u)  $N(R^{10})(CO)NR^4R^{11}$ , and
- v)  $O(CO)R^4$ ;

or, any two independent  $R^2$  on the same or adjacent atoms may be joined together to form a ring selected from cyclobutyl, cyclopentenyl, cyclopentyl, cyclohexenyl, cyclohexyl, phenyl, naphthyl, thienyl, thiazolyl, thiazolinyl, oxazolyl, oxazolinyl, imidazolyl, imidazolinyl, imidazolidinyl, pyridyl, pyrimidyl, pyrazinyl, pyrrolyl, pyrrolinyl, morpholinyl, thiomorpholine, thiomorpholine S-oxide, thiomorpholine S-dioxide, azetidiny, pyrrolidinyl, piperidinyl, tetrahydrofuranyl, tetrahydropyranyl, tetrahydropyridyl, furanyl, dihydrofuranyl, dihydropyranyl and piperazinyl;

$R^{10}$  and  $R^{11}$  are independently selected from: H,  $C_{1-6}$  alkyl,  $(F)_p C_{1-6}$  alkyl,  $C_{3-6}$  cycloalkyl, aryl, heteroaryl, and benzyl, unsubstituted or substituted with halogen, hydroxy or  $C_{1-6}$  alkoxy, where  $R^{10}$  and  $R^{11}$  may be joined together to form a ring selected from: azetidiny, pyrrolidinyl, piperidinyl, piperazinyl, or morpholinyl, which is unsubstituted or substituted with 1-5 substituents where the substituents are independently selected from  $R^4$ ;

$R^4$  is independently selected from: H,  $C_{1-6}$  alkyl,  $(F)_p C_{1-6}$  alkyl,  $C_{3-6}$  cycloalkyl, aryl, heteroaryl and benzyl, unsubstituted or substituted with halogen, hydroxy or  $C_{1-6}$  alkoxy;

W is O,  $NR^4$  or  $C(R^4)_2$ ;

X is C or S;

Y is O,  $(R^4)_2$ , NCN,  $NSO_2CH_3$ ,  $NCONH_2$ , or Y is  $O_2$  when X is S;

$R^6$  is independently selected from H and:

- a)  $C_{1-6}$  alkyl,
- b)  $C_{3-6}$  cycloalkyl,
- c) aryl, unsubstituted or substituted with 1-5 substituents where the substituents are independently selected from  $R^4$ ,
- d) heteroaryl, unsubstituted or substituted with 1-5 substituents where the substituents are independently selected from  $R^4$ ,
- e) heterocycle, unsubstituted or substituted with 1-5 substituents where the substituents are independently selected from  $R^4$ ,
- f)  $(F)_p C_{1-3}$  alkyl,
- g) halogen,

- h)  $OR^4$ ,  
 i)  $O(CH_2)_sOR^4$ ,  
 j)  $CO_2R^4$ ,  
 k)  $(CO)NR^{10}R^{11}$ ,  
 5 l)  $O(CO)NR^{10}R^{11}$ ,  
 m)  $N(R^4)(CO)NR^{10}R^{11}$ ,  
 n)  $N(R^{10})(CO)R^{11}$ ,  
 o)  $N(R^{10})(CO)OR^{11}$ ,  
 p)  $SO_2NR^{10}R^{11}$ ,  
 10 q)  $N(R^{10})SO_2R^{11}$ ,  
 r)  $S(O)_mR^{10}$ ,  
 s)  $CN$ ,  
 t)  $NR^{10}R^{11}$ ,  
 u)  $N(R^{10})(CO)NR^4R^{11}$ , and  
 15 v)  $O(CO)R^4$ ;

G-J is selected from:  $N$ ,  $N-C(R^5)_2$ ,  $C=C(R^5)$ ,  $C=N$ ;  $C(R^5)$ ,  $C(R^5)-C(R^5)_2$ ,  $C(R^5)-C(R^5)_2-C(R^5)_2$ ,  $C=C(R^5)-C(R^5)_2$ ,  $C(R^5)-C(R^5)=C(R^5)$ ,  $C(R^5)-C(R^5)_2-N(R^5)$ ,  $C=C(R^5)-N(R^5)$ ,  $C(R^5)-C(R^5)=N$ ,  $C(R^5)-N(R^5)-C(R^5)_2$ ,  $C=N-C(R^5)_2$ ,  $C(R^5)-N=C(R^5)$ ,  $C(R^5)-N(R^5)-N(R^5)$ ,  
 20  $C=N-N(R^5)$ ,  $N-C(R^5)_2-C(R^5)_2$ ,  $N-C(R^5)=C(R^5)$ ,  $N-C(R^5)_2-N(R^5)$ ,  $N-C(R^5)=N$ ,  $N-N(R^5)-C(R^5)_2$  and  $N-N=C(R^5)$ ;

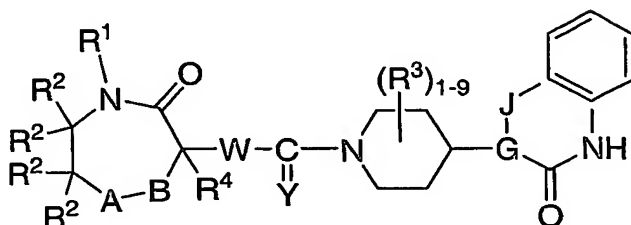
$R^5$  is independently selected from H, substituted or unsubstituted  $C_1$ - $C_3$  alkyl,  $CN$ ,  $OR^4$ ,  $N(R^4)_2$  and  $CO_2R^4$ ;

25  $R^3$  is independently selected from H, substituted or unsubstituted  $C_1$ - $C_3$  alkyl, F,  $CN$  and  $CO_2R^4$ ;

p is 0 to  $2q+1$ , for a substituent with q carbons;  
 30 m is 0, 1 or 2;  
 n is 0 or 1;  
 s is 1, 2 or 3;

and pharmaceutically acceptable salts and individual diastereomers thereof.

2. The compound of claim 1 of the formula:



wherein:

A is a bond,  $C(R^2)_2$ , O,  $S(O)_m$  or  $NR^2$ ;

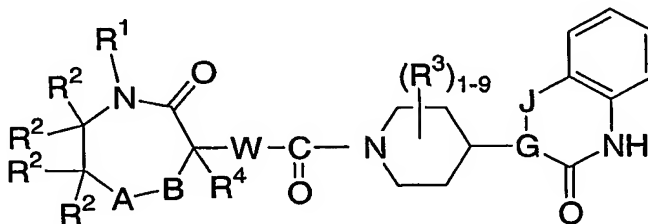
B is  $(C(R^2)_2)_n$ ;

n is 0 or 1;

Y is O,  $(R^4)_2$ , NCN,  $NSO_2CH_3$  or  $NCONH_2$ ,

and pharmaceutically acceptable salts and individual stereoisomers thereof.

3. The compound of claim 1 of the formula:



wherein:

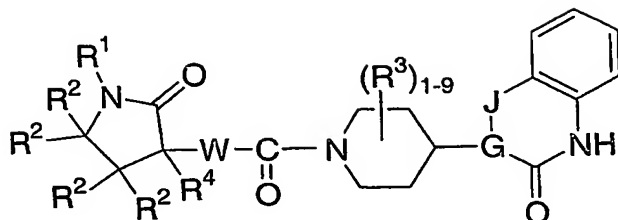
A is a bond,  $C(R^2)_2$ , O,  $S(O)_m$  or  $NR^2$ ;

B is  $(C(R^2)_2)_n$ ; and

n is 0 or 1;

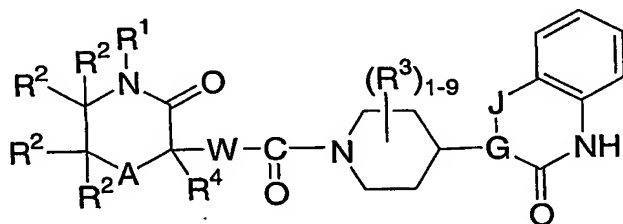
and pharmaceutically acceptable salts and individual stereoisomers thereof.

4. The compound of claim 1 of the formula:



- 5 and pharmaceutically acceptable salts and individual stereoisomers thereof.

5. The compound of claim 1 of the formula:

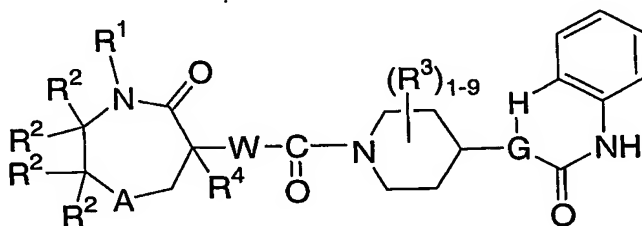


- 10 wherein:

A is  $C(R^2)_2$ , O,  $S(O)_m$  or  $NR^2$ ;

and pharmaceutically acceptable salts and individual stereoisomers thereof.

6. The compound of claim 1 of the formula:



wherein:

A is  $C(R^2)_2$ , O,  $S(O)_m$  or  $NR^2$ ;

- 20 and pharmaceutically acceptable salts and individual stereoisomers thereof.

7. The compound of claim 1, wherein:



R<sup>1</sup> is selected from:

- 1) H, C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>3</sub>-6 cycloalkyl and heterocycle, unsubstituted or substituted with one or more substituents independently selected from:
  - a) C<sub>1</sub>-6 alkyl,
  - b) C<sub>3</sub>-6 cycloalkyl,
  - c) aryl, unsubstituted or substituted with 1-5 substituents where the substituents are independently selected from R<sup>4</sup>,
  - d) heteroaryl, unsubstituted or substituted with 1-5 substituents where the substituents are independently selected from R<sup>4</sup>,
  - e) heterocycle, unsubstituted or substituted with 1-5 substituents where the substituents are independently selected from R<sup>4</sup>,
  - f) (F)<sub>p</sub>C<sub>1-3</sub> alkyl,
  - g) halogen,
  - h) OR<sup>4</sup>,
  - i) O(CH<sub>2</sub>)<sub>s</sub>OR<sup>4</sup>,
  - j) CO<sub>2</sub>R<sup>4</sup>,
  - k) CN,
  - l) NR<sup>10</sup>R<sup>11</sup>, and
  - m) O(CO)R<sup>4</sup>; and
- 2) aryl or heteroaryl, unsubstituted or substituted with one or more substituents independently selected from:
  - a) C<sub>1</sub>-6 alkyl,
  - b) C<sub>3</sub>-6 cycloalkyl,
  - c) (F)<sub>p</sub>C<sub>1-3</sub> alkyl,
  - d) halogen,
  - e) OR<sup>4</sup>,
  - f) CO<sub>2</sub>R<sup>4</sup>,
  - g) (CO)NR<sup>10</sup>R<sup>11</sup>,
  - h) SO<sub>2</sub>NR<sup>10</sup>R<sup>11</sup>,
  - i) N(R<sup>10</sup>) SO<sub>2</sub>R<sup>11</sup>,
  - j) S(O)<sub>m</sub>R<sup>4</sup>,
  - k) CN,
  - l) NR<sup>10</sup>R<sup>11</sup>, and

m)  $O(CO)R^4$ ;

$R^2$  is selected from:

1) H,  $C_1$ - $C_6$  alkyl,  $C_2$ - $C_6$  alkynyl,  $C_3$ -6 cycloalkyl and heterocycle, unsubstituted or substituted with one or more substituents independently selected from:

a)  $C_1$ -6 alkyl,

b)  $C_3$ -6 cycloalkyl,

c) aryl, unsubstituted or substituted with 1-5 substituents where the substituents are independently selected from  $R^4$ ,

d) heteroaryl, unsubstituted or substituted with 1-5 substituents where the substituents are independently selected from  $R^4$ ,

heterocycle, unsubstituted or substituted with 1-5 substituents where the substituents are independently selected from  $R^4$ , e) where the substituents are independently selected from  $R^4$ , f)  $(F)_pC_{1-3}$  alkyl,

g) halogen,

h)  $OR^4$ ,

i)  $O(CH_2)_sOR^4$ ,

j)  $CO_2R^4$ ,

k)  $S(O)_mR^4$ ,

l) CN,

m)  $NR^{10}R^{11}$ , and

n)  $O(CO)R^4$ ; and

2) aryl or heteroaryl, unsubstituted or substituted with one more substituents independently selected from:

a)  $C_1$ -6 alkyl,

b)  $C_3$ -6 cycloalkyl,

c)  $(F)_pC_{1-3}$  alkyl,

d) halogen,

e)  $OR^4$ ,

f)  $CO_2R^4$ ,

g)  $(CO)NR^{10}R^{11}$ ,

h)  $SO_2NR^{10}R^{11}$ ,

i)  $N(R^{10})SO_2R^{11}$ ,

j)  $S(O)_mR^4$ ,

- k) CN,
- l)  $\text{NR}^{10}\text{R}^{11}$ , and
- m)  $\text{O}(\text{CO})\text{R}^4$ ;

5 or, any two independent  $\text{R}^2$  on the same or adjacent atoms may be joined together to form a ring selected from cyclobutyl, cyclopentenyl, cyclopentyl, cyclohexenyl, cyclohexyl, phenyl, naphthyl, thienyl, thiazolyl, thiazolinyl, oxazolyl, oxazolinyl, imidazolyl, imidazolinyl, imidazolidinyl, pyridyl, pyrimidyl, pyrazinyl, pyrrolyl, pyrrolinyl, morpholinyl, thiomorpholine, thiomorpholine S-oxide, thiomorpholine S-dioxide, azetidyl, pyrrolidinyl, piperidinyl, tetrahydrofuranyl, tetrahydropyranyl, tetrahydropyridyl, furanyl, dihydrofuranyl, dihydropyranyl and piperazinyl;

G-J is selected from:

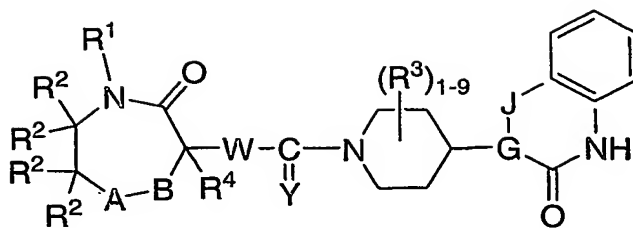
15 N,  $\text{N}-\text{C}(\text{R}^5)_2$ ,  $\text{C}=\text{C}(\text{R}^5)$ ,  $\text{C}=\text{N}$ ,  $\text{C}=\text{C}(\text{R}^5)-\text{C}(\text{R}^5)$ ,  $\text{C}(\text{R}^5)-\text{C}(\text{R}^5)=\text{C}(\text{R}^5)$ ,  $\text{N}-\text{C}(\text{R}^5)_2-\text{C}(\text{R}^5)_2$  and  $\text{N}-\text{C}(\text{R}^5)=\text{C}(\text{R}^5)$ ;

$\text{R}^6$  is independently selected from H and:

- a)  $\text{C}_{1-6}$  alkyl,
- b)  $\text{C}_{3-6}$  cycloalkyl,
- 20 c)  $(\text{F})_p\text{C}_{1-3}$  alkyl,
- d) halogen,
- e)  $\text{OR}^4$ ,
- f)  $\text{CO}_2\text{R}^4$ ,
- g)  $(\text{CO})\text{NR}^{10}\text{R}^{11}$ ,
- 25 h)  $\text{SO}_2\text{NR}^{10}\text{R}^{11}$ ,
- i)  $\text{N}(\text{R}^{10})\text{SO}_2\text{R}^{11}$ ,
- j)  $\text{S}(\text{O})_m\text{R}^4$ ,
- k) CN,
- l)  $\text{NR}^{10}\text{R}^{11}$ , and
- 30 m)  $\text{O}(\text{CO})\text{R}^4$ ;

and pharmaceutically acceptable salts and individual stereoisomers thereof.

8. The compound of claim 7 of the formula:



wherein:

5 A is a bond,  $C(R^2)_2$ , O,  $S(O)_m$  or  $NR^2$ ;

B is  $(C(R^2)_2)_n$ ;

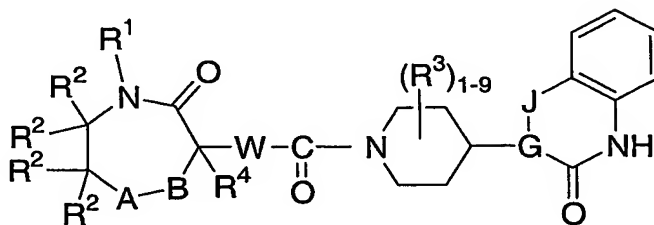
n is 0 or 1;

Y is O,  $(R^4)_2$ , NCN,  $NSO_2CH_3$  or  $NCONH_2$ ,

10

and pharmaceutically acceptable salts and individual stereoisomers thereof.

9. The compound of claim 7 of the formula:



15

wherein:

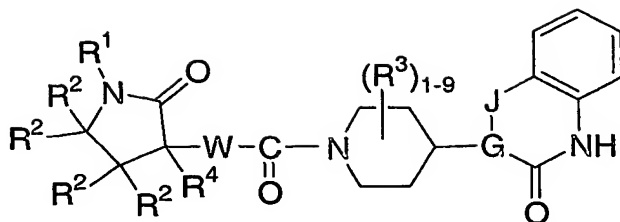
A is a bond,  $C(R^2)_2$ , O,  $S(O)_m$  or  $NR^2$ ;

B is  $(C(R^2)_2)_n$ ;

20 n is 0 or 1;

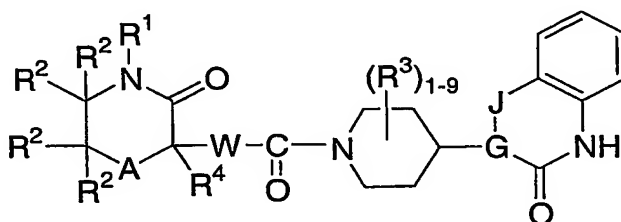
and pharmaceutically acceptable salts and individual stereoisomers thereof.

10. The compound of claim 7 of the formula:



and pharmaceutically acceptable salts and individual stereoisomers thereof.

- 5                    11.    The compound of claim 7 of the formula:

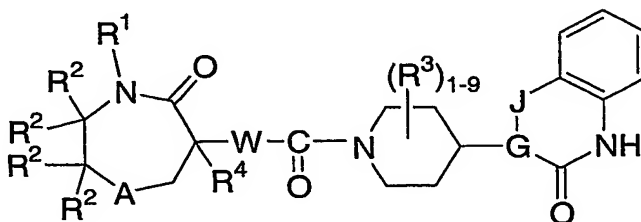


wherein:

- 10    A is  $C(R^2)_2$ , O,  $S(O)_m$  or  $NR^2$ ;

and pharmaceutically acceptable salts and individual stereoisomers thereof.

12.    The compound of claim 7 of the formula:



wherein:

A is  $C(R^2)_2$ , O,  $S(O)_m$  or  $NR^2$ ;

and pharmaceutically acceptable salts and individual stereoisomers thereof.

- 20                    13.    The compound of claim 1, wherein:

$R^1$  is selected from:

1) H, C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>3</sub>-C<sub>6</sub> cycloalkyl and heterocycle, unsubstituted or substituted with one or more substituents independently selected from:

- a) C<sub>1</sub>-C<sub>6</sub> alkyl,
- b) C<sub>3</sub>-C<sub>6</sub> cycloalkyl,
- 5 c) phenyl, unsubstituted or substituted with 1-5 substituents where the substituents are independently selected from R<sup>4</sup>,
- d) heteroaryl, unsubstituted or substituted with 1-5 substituents where the substituents are independently selected from R<sup>4</sup>,

and where heteroaryl is selected from:

10 imidazole, isoxazole, oxazole, pyrazine, pyrazole, pyridazine, pyridine, pyrimidine, and thiazole;

- e) heterocycle, unsubstituted or substituted with 1-5 substituents where the substituents are independently selected from R<sup>4</sup>,

and where heterocycle is selected from:

15 azetidine, dioxane, dioxolane, morpholine, oxetane, piperazine, piperidine, pyrrolidine, tetrahydrofuran, and tetrahydropyran;

- f) (F)<sub>p</sub>C<sub>1-3</sub> alkyl,
- g) halogen,
- h) OR<sup>4</sup>,
- 20 i) O(CH<sub>2</sub>)<sub>s</sub>OR<sup>4</sup>,
- j) CO<sub>2</sub>R<sup>4</sup>,
- k) CN,
- l) NR<sup>10</sup>R<sup>11</sup>, and
- m) O(CO)R<sup>4</sup>; and

25 2) aryl or heteroaryl, selected from:

phenyl, imidazole, isoxazole, oxazole, pyrazine, pyrazole, pyridazine, pyridine, pyrimidine, and thiazole, unsubstituted or substituted with one or more substituents independently selected from:

- 30 a) C<sub>1</sub>-C<sub>6</sub> alkyl,
- b) C<sub>3</sub>-C<sub>6</sub> cycloalkyl,
- c) (F)<sub>p</sub>C<sub>1-3</sub> alkyl,
- d) halogen,

- e)  $OR^4$ ,
- f)  $CO_2R^4$ ,
- g)  $(CO)NR^{10}R^{11}$ ,
- h)  $SO_2NR^{10}R^{11}$ ,
- 5 i)  $N(R^{10})SO_2R^{11}$ ,
- j)  $S(O)_mR^4$ ,
- k)  $CN$ ,
- l)  $NR^{10}R^{11}$ , and
- m)  $O(CO)R^4$ ;

10  $R^2$  is selected from:

- 1) H,  $C_0$ - $C_6$  alkyl,  $C_3$ -6 cycloalkyl and heterocycle, unsubstituted or substituted with one or more substituents independently selected from:

- 15 a)  $C_{1-6}$  alkyl,
- b)  $C_{3-6}$  cycloalkyl,
- c) phenyl, unsubstituted or substituted with 1-5 substituents where the substituents are independently selected from  $R^4$ ,
- d) heteroaryl, unsubstituted or substituted with 1-5 substituents where the substituents are independently selected from
- 20  $R^4$ , and where heteroaryl is selected from:

benzimidazole, benzothiophene, furan, imidazole, indole, isoxazole, oxazole, pyrazine, pyrazole, pyridazine, pyridine, pyrimidine, pyrrole, thiazole, thiophene, and triazole;

- 25 e) heterocycle, unsubstituted or substituted with 1-5 substituents where the substituents are independently selected from  $R^4$ , and

where heterocycle is selected from:

azetidine, imidazolidine, imidazoline, isoxazoline, isoxazolidine, morpholine, oxazoline, oxazolidine, oxetane, pyrazolidine, pyrazoline, pyrroline, tetrahydrofuran, tetrahydropyran, thiazoline, and thiazolidine;

- 30 f)  $(F)_pC_{1-3}$  alkyl,
- g) halogen,
- h)  $OR^4$ .

- i)  $O(CH_2)_sOR^4$ ,
- j)  $CO_2R^4$ ,
- k) CN,
- l)  $NR^{10}R^{11}$ , and
- m)  $O(CO)R^4$ ; and

2) aryl or heteroaryl, selected from:

phenyl, benzimidazole, benzothiophene, furan, imidazole, indole, isoxazole, oxazole, pyrazine, pyrazole, pyridazine, pyridine, pyrimidine, pyrrole, thiazole, thiophene, and triazole;

unsubstituted or substituted with one or more substituents independently selected from:

- a) C<sub>1-6</sub> alkyl,
- b) C<sub>3-6</sub> cycloalkyl,
- c) (F)<sub>p</sub>C<sub>1-3</sub> alkyl,
- d) halogen,
- e)  $OR^4$ ,
- f)  $CO_2R^4$ ,
- g)  $(CO)NR^{10}R^{11}$ ,
- h)  $SO_2NR^{10}R^{11}$ ,
- i)  $N(R^{10})SO_2R^{11}$ ,
- j)  $S(O)_mR^4$ ,
- k) CN,
- l)  $NR^{10}R^{11}$ , and
- m)  $O(CO)R^4$ ;

or, any two independent  $R^2$  on the same or adjacent atoms may be joined together to form a ring selected from cyclobutyl, cyclopentenyl, cyclopentyl, cyclohexenyl, cyclohexyl, phenyl, naphthyl, thienyl, thiazolyl, thiazolinyl, oxazolyl, oxazolinyl, imidazolyl, imidazolinyl, imidazolidinyl, pyridyl, pyrimidyl, pyrazinyl, pyrrolyl, pyrrolinyl, morpholinyl, thiomorpholine, thiomorpholine S-oxide, thiomorpholine S-dioxide, azetidyl, pyrrolidinyl, piperidinyl, tetrahydrofuranyl, tetrahydropyranyl, tetrahydropyridyl, furanyl, dihydrofuranyl, dihydropyranyl and piperazinyl;



$R^{10}$  and  $R^{11}$  are independently selected from: H, C<sub>1-6</sub> alkyl, (F)<sub>p</sub>C<sub>1-6</sub> alkyl, C<sub>3-6</sub> cycloalkyl, aryl, heteroaryl and benzyl, unsubstituted or substituted with halogen, hydroxy or C<sub>1-6</sub> alkoxy, where  $R^{10}$  and  $R^{11}$  may be joined together to form a ring selected from: azetidiny, pyrrolidiny, piperidiny, piperaziny and morpholiny, which is unsubstituted or substituted with 1-5 substituents where the substituents are independently selected from  $R^4$ ;

$R^4$  is independently selected from: H, C<sub>1-6</sub> alkyl, (F)<sub>p</sub>C<sub>1-6</sub> alkyl, C<sub>3-6</sub> cycloalkyl, aryl, heteroaryl and phenyl, unsubstituted or substituted with hydroxy or C<sub>1-6</sub> alkoxy;

W is  $NR^4$  or  $C(R^4)_2$ ;

G-J is selected from:

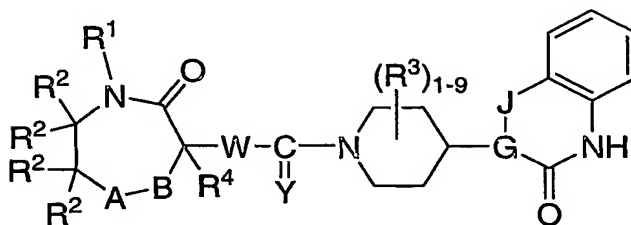
N,  $N-C(R^5)_2$ ,  $C=C(R^5)$ ,  $C=N$ ,  $C=C(R^5)-C(R^5)_2$ ,  $C(R^5)-C(R^5)=C(R^5)$ ,  $N-C(R^5)_2-C(R^5)_2$ , and  $N-C(R^5)=C(R^5)$ ;

$R^6$  is independently selected from H and:

- a) C<sub>1-6</sub> alkyl,
- b) C<sub>3-6</sub> cycloalkyl,
- c) (F)<sub>p</sub>C<sub>1-3</sub> alkyl,
- d) halogen,
- e)  $OR^4$ ,
- f)  $CO_2R^4$ ,
- g)  $(CO)NR^{10}R^{11}$ ,
- h)  $SO_2NR^{10}R^{11}$ ,
- i)  $N(R^{10})SO_2R^{11}$ ,
- j)  $S(O)_mR^4$ ,
- k) CN,
- l)  $NR^{10}R^{11}$ , and
- m)  $O(CO)R^4$ ;

and pharmaceutically acceptable salts and individual stereoisomers thereof.

14. The compound of claim 13 of the formula:



5 wherein:

A is a bond,  $C(R^2)_2$ , O,  $S(O)_m$  or  $NR^2$ ;

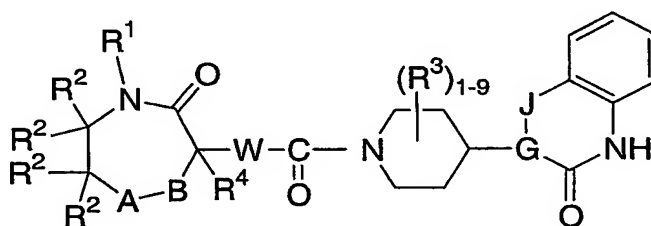
B is  $(C(R^2)_2)_n$ ;

n is 0 or 1;

Y is O,  $(R^4)_2$ , NCN,  $NSO_2CH_3$  or  $NCONH_2$ ,

10 and pharmaceutically acceptable salts and individual stereoisomers thereof.

15. The compound of claim 13 of the formula:



15

wherein:

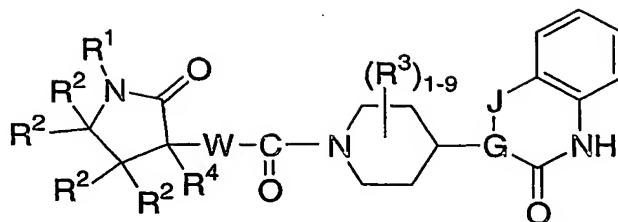
A is a bond,  $C(R^2)_2$ , O,  $S(O)_m$  or  $NR^2$ ;

B is  $(C(R^2)_2)_n$ ;

n is 0 or 1;

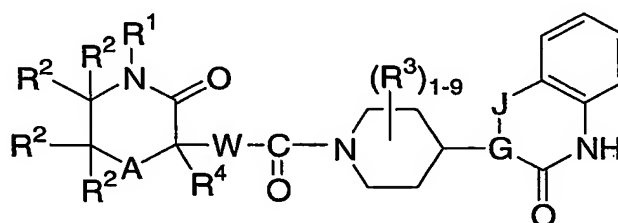
20 and pharmaceutically acceptable salts and individual stereoisomers thereof.

16. The compound of claim 13 of the formula:



and pharmaceutically acceptable salts and individual stereoisomers thereof.

- 5                    17.    The compound of claim 13 of the formula:

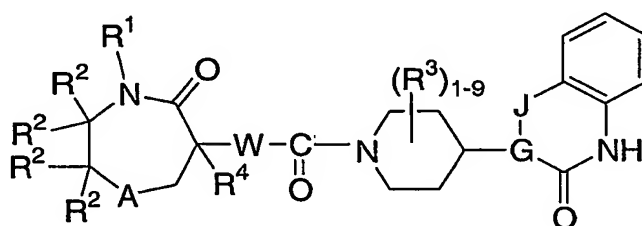


wherein:

- 10    A is C(R²)₂, O, S(O)<sub>m</sub> or NR²;

and pharmaceutically acceptable salts and individual stereoisomers thereof.

18.    The compound of claim 13 of the formula:

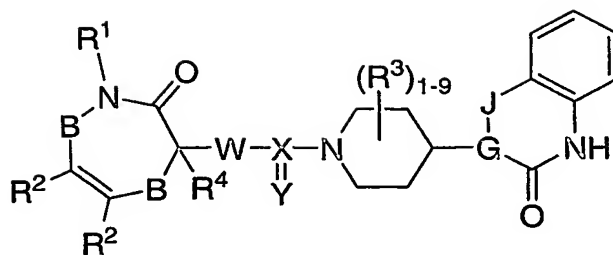


wherein:

A is C(R²)₂, O, S(O)<sub>m</sub> or NR²;

and pharmaceutically acceptable salts and individual stereoisomers thereof.

19.    A compound of the formula:



wherein:

5 B is independently (C(R<sup>2</sup>)<sub>2</sub>)<sub>n</sub>;

R<sup>1</sup> is selected from:

- 1) H, C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>2</sub>-C<sub>6</sub> alkenyl, C<sub>2</sub>-C<sub>6</sub> alkynyl, C<sub>3</sub>-6 cycloalkyl, and heterocycle,  
unsubstituted or substituted with one or more substituents independently selected  
from:
  - a) C<sub>1</sub>-6 alkyl,
  - b) C<sub>3</sub>-6 cycloalkyl,
  - c) aryl, unsubstituted or substituted with 1-5 substituents where  
the substituents are independently selected from R<sup>4</sup>,
  - d) heteroaryl, unsubstituted or substituted with 1-5 substituents  
where the substituents are independently selected from R<sup>4</sup>,
  - e) heterocycle, unsubstituted or substituted with 1-5 substituents  
where the substituents are independently selected from R<sup>4</sup>,
  - f) (F)<sub>p</sub>C<sub>1-3</sub> alkyl,
  - g) halogen,
  - h) OR<sup>4</sup>,
  - i) O(CH<sub>2</sub>)<sub>s</sub> OR<sup>4</sup>,
  - j) CO<sub>2</sub>R<sup>4</sup>,
  - k) (CO)NR<sup>10</sup>R<sup>11</sup>,
  - l) O(CO)NR<sup>10</sup>R<sup>11</sup>,
  - m) N(R<sup>4</sup>)(CO)NR<sup>10</sup>R<sup>11</sup>,
  - n) N(R<sup>10</sup>)(CO)R<sup>11</sup>,
  - o) N(R<sup>10</sup>)(CO)OR<sup>11</sup>,
  - p) SO<sub>2</sub>NR<sup>10</sup>R<sup>11</sup>.

- q)  $N(R^{10})SO_2R^{11}$ ,
- r)  $S(O)_mR^{10}$ ,
- s) CN,
- t)  $NR^{10}R^{11}$ ,
- 5 u)  $N(R^{10})(CO)NR^4R^{11}$ , and,
- v)  $O(CO)R^4$ ; and

2) aryl or heteroaryl, unsubstituted or substituted with one or more substituents independently selected from:

- 10 a)  $C_{1-6}$  alkyl,
- b)  $C_{3-6}$  cycloalkyl,
- c) aryl, unsubstituted or substituted with 1-5 substituents where the substituents are independently selected from  $R^4$ ,
- 15 d) heteroaryl, unsubstituted or substituted with 1-5 substituents where the substituents are independently selected from  $R^4$ , e) heterocycle, unsubstituted or substituted with 1-5 substituents where the substituents are independently selected from  $R^4$ , f)  $(F)_pC_{1-3}$  alkyl,
- g) halogen,
- h)  $OR^4$ ,
- 20 i)  $O(CH_2)_sOR^4$ ,
- j)  $CO_2R^4$ ,
- k)  $(CO)NR^{10}R^{11}$ ,
- l)  $O(CO)NR^{10}R^{11}$ ,
- m)  $N(R^4)(CO)NR^{10}R^{11}$ ,
- 25 n)  $N(R^{10})(CO)R^{11}$ ,
- o)  $N(R^{10})(CO)OR^{11}$ ,
- p)  $SO_2NR^{10}R^{11}$ ,
- q)  $N(R^{10})SO_2R^{11}$ ,
- r)  $S(O)_mR^{10}$ ,
- 30 s) CN,
- t)  $NR^{10}R^{11}$ ,
- u)  $N(R^{10})(CO)NR^4R^{11}$ , and,
- v)  $O(CO)R^4$ ; and

$R^2$  is independently selected from:

- 1) H, C<sub>0</sub>-C<sub>6</sub> alkyl, C<sub>2</sub>-C<sub>6</sub> alkenyl, C<sub>2</sub>-C<sub>6</sub> alkynyl, C<sub>3</sub>-6 cycloalkyl and heterocycle, unsubstituted or substituted with one or more substituents independently selected from:

- a) C<sub>1</sub>-6 alkyl,  
 b) C<sub>3</sub>-6 cycloalkyl,  
 c) aryl, unsubstituted or substituted with 1-5 substituents where the substituents are independently selected from  $R^4$ ,  
 d) heteroaryl, unsubstituted or substituted with 1-5 substituents where the substituents are independently selected from  $R^4$ ,  
 e) heterocycle, unsubstituted or substituted with 1-5 substituents where the substituents are independently selected from  $R^4$ , f)

(F)<sub>p</sub>C<sub>1</sub>-3 alkyl,

- g) halogen,  
 h) OR<sup>4</sup>,  
 i) O(CH<sub>2</sub>)<sub>s</sub>OR<sup>4</sup>,  
 j) CO<sub>2</sub>R<sup>4</sup>,  
 k) (CO)NR<sup>10</sup>R<sup>11</sup>,  
 l) O(CO)NR<sup>10</sup>R<sup>11</sup>,  
 m) N(R<sup>4</sup>)(CO)NR<sup>10</sup>R<sup>11</sup>,  
 n) N(R<sup>10</sup>)(CO)R<sup>11</sup>,  
 o) N(R<sup>10</sup>)(CO)OR<sup>11</sup>,  
 p) SO<sub>2</sub>NR<sup>10</sup>R<sup>11</sup>,  
 q) N(R<sup>10</sup>) SO<sub>2</sub>R<sup>11</sup>,  
 r) S(O)<sub>m</sub>R<sup>10</sup>,  
 s) CN,  
 t) NR<sup>10</sup>R<sup>11</sup>,  
 u) N(R<sup>10</sup>)(CO)NR<sup>4</sup>R<sup>11</sup>, and,  
 v) O(CO)R<sup>4</sup>; and

- 2) aryl or heteroaryl, unsubstituted or substituted with one or more substituents independently selected from:

- a) C<sub>1</sub>-6 alkyl,

- b) C<sub>3-6</sub> cycloalkyl,
- c) aryl, unsubstituted or substituted with 1-5 substituents where the substituents are independently selected from R<sup>4</sup>,
- d) heteroaryl, unsubstituted or substituted with 1-5 substituents where the substituents are independently selected from R<sup>4</sup>,
- e) heterocycle, unsubstituted or substituted with 1-5 substituents where the substituents are independently selected from R<sup>4</sup>,
- f) (F)<sub>p</sub>C<sub>1-3</sub> alkyl,
- g) halogen,
- h) OR<sup>4</sup>,
- i) O(CH<sub>2</sub>)<sub>s</sub>OR<sup>4</sup>,
- j) CO<sub>2</sub>R<sup>4</sup>,
- k) (CO)NR<sup>10</sup>R<sup>11</sup>,
- l) O(CO)NR<sup>10</sup>R<sup>11</sup>,
- m) N(R<sup>4</sup>)(CO)NR<sup>10</sup>R<sup>11</sup>,
- n) N(R<sup>10</sup>)(CO)R<sup>11</sup>,
- o) N(R<sup>10</sup>)(CO)OR<sup>11</sup>,
- p) SO<sub>2</sub>NR<sup>10</sup>R<sup>11</sup>,
- q) N(R<sup>10</sup>) SO<sub>2</sub>R<sup>11</sup>,
- r) S(O)<sub>m</sub>R<sup>10</sup>,
- s) CN,
- t) NR<sup>10</sup>R<sup>11</sup>,
- u) N(R<sup>10</sup>)(CO)NR<sup>4</sup>R<sup>11</sup>, and,
- v) O(CO)R<sup>4</sup>;

or, any two independent R<sup>2</sup> on the same or adjacent atoms may be joined together to form a ring selected from cyclobutyl, cyclopentenyl, cyclopentyl, cyclohexenyl, cyclohexyl, phenyl, naphthyl, thienyl, thiazolyl, thiazoliny, oxazolyl, oxazoliny, imidazolyl, imidazoliny, imidazolidiny, pyridyl, pyrimidyl, pyraziny, pyrrolyl, pyrroliny, morpholiny, thiomorpholine, thiomorpholine S-oxide, thiomorpholine S-dioxide, azetidiny, pyrrolidiny, piperidiny, tetrahydrofuranyl, tetrahydropyranyl, tetrahydropyridyl, furanyl, dihydrofuranyl, dihydropyranyl and piperaziny;

$R^{10}$  and  $R^{11}$  are independently selected from: H, C<sub>1-6</sub> alkyl, (F)<sub>p</sub>C<sub>1-6</sub> alkyl, C<sub>3-6</sub> cycloalkyl, aryl, heteroaryl, and benzyl, unsubstituted or substituted with halogen, hydroxy or C<sub>1-6</sub> alkoxy, where  $R^{10}$  and  $R^{11}$  may be joined together to form a ring selected from: azetidiny, pyrrolidinyl, piperidinyl, piperazinyl, or morpholinyl, which is unsubstituted or substituted with 1-5 substituents where the substituents are independently selected from  $R^4$  ;

$R^4$  is independently selected from: H, C<sub>1-6</sub> alkyl, (F)<sub>p</sub>C<sub>1-6</sub> alkyl, C<sub>3-6</sub> cycloalkyl, aryl, heteroaryl and benzyl, unsubstituted or substituted with halogen, hydroxy or C<sub>1-6</sub> alkoxy;

W is O,  $NR^4$  or  $C(R^4)_2$ ;

X is C or S;

Y is O,  $(R^4)_2$ , NCN, NSO<sub>2</sub>CH<sub>3</sub>, NCONH<sub>2</sub>, or Y is O<sub>2</sub> when X is S;

$R^6$  is independently selected from H and:

- a) C<sub>1-6</sub> alkyl,
- b) C<sub>3-6</sub> cycloalkyl,
- c) aryl, unsubstituted or substituted with 1-5 substituents where the substituents are independently selected from  $R^4$ ,
- d) heteroaryl, unsubstituted or substituted with 1-5 substituents where the substituents are independently selected from  $R^4$ ,
- e) heterocycle, unsubstituted or substituted with 1-5 substituents where the substituents are independently selected from  $R^4$ ,
- f) (F)<sub>p</sub>C<sub>1-3</sub> alkyl,
- g) halogen,
- h)  $OR^4$ ,
- i)  $O(CH_2)_sOR^4$ ,
- j)  $CO_2R^4$ ,
- k)  $(CO)NR^{10}R^{11}$ ,
- l)  $O(CO)NR^{10}R^{11}$ ,
- m)  $N(R^4)(CO)NR^{10}R^{11}$ ,
- n)  $N(R^{10})(CO)R^{11}$ .



- o)  $N(R^{10})(CO)OR^{11}$ ,
- p)  $SO_2NR^{10}R^{11}$ ,
- q)  $N(R^{10})SO_2R^{11}$ ,
- r)  $S(O)_mR^{10}$ ,
- s)  $CN$ ,
- t)  $NR^{10}R^{11}$ ,
- u)  $N(R^{10})(CO)NR^4R^{11}$ , and,
- v)  $O(CO)R^4$ ; and

10 G-J is selected from:  $N$ ,  $N-C(R^5)_2$ ,  $C=C(R^5)$ ,  $C=N$ ;  $C(R^5)$ ,  $C(R^5)-C(R^5)_2$ ,  $C(R^5)-C(R^5)_2-C(R^5)_2$ ,  $C=C(R^5)-C(R^5)_2$ ,  $C(R^5)-C(R^5)=C(R^5)$ ,  $C(R^5)-C(R^5)_2-N(R^5)$ ,  $C=C(R^5)-N(R^5)$ ,  $C(R^5)-C(R^5)=N$ ,  $C(R^5)-N(R^5)-C(R^5)_2$ ,  $C=N-C(R^5)_2$ ,  $C(R^5)-N=C(R^5)$ ,  $C(R^5)-N(R^5)-N(R^5)$ ,  $C=N-N(R^5)$ ,  $N-C(R^5)_2-C(R^5)_2$ ,  $N-C(R^5)=C(R^5)$ ,  $N-C(R^5)_2-N(R^5)$ ,  $N-C(R^5)=N$ ,  $N-N(R^5)-C(R^5)_2$  and  $N-N=C(R^5)$ ;

15

Q, T, U and V are each independently a C or N wherein at least one but no more than three of Q, T, U and V are N, and wherein when any of Q, T, U, or V is C it unsubstituted or substituted where the substituents are independently selected from  $R^6$ ;

20  $R^5$  is independently selected from H, substituted or unsubstituted  $C_1-C_3$  alkyl,  $CN$ ,  $OR^4$ ,  $N(R^4)_2$  and  $CO_2R^4$ ;

$R^3$  is independently selected from H, substituted or unsubstituted  $C_1-C_3$  alkyl, F,  $CN$  and  $CO_2R^4$ ;

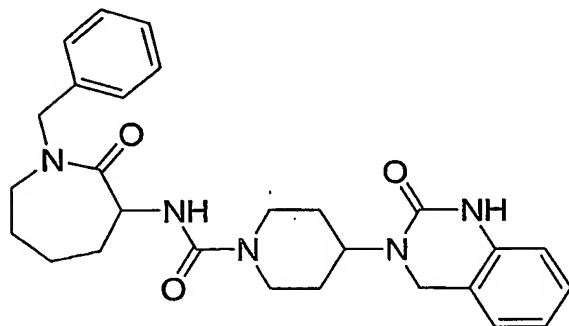
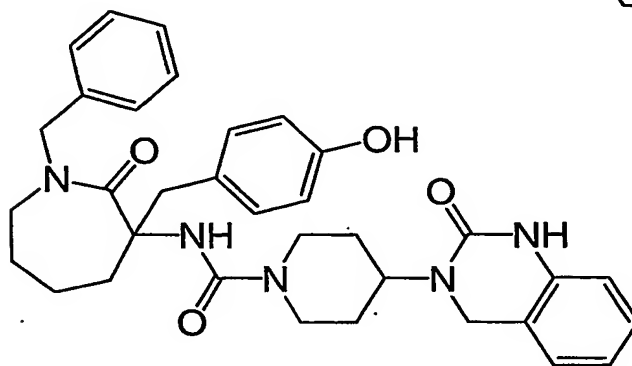
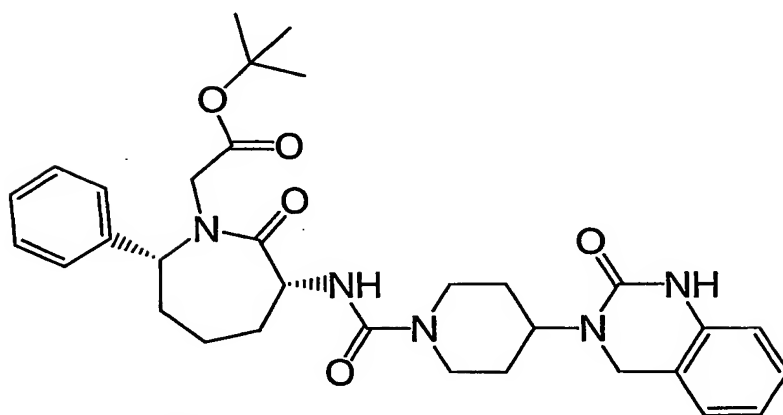
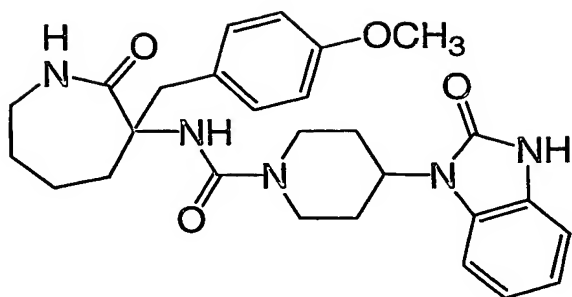
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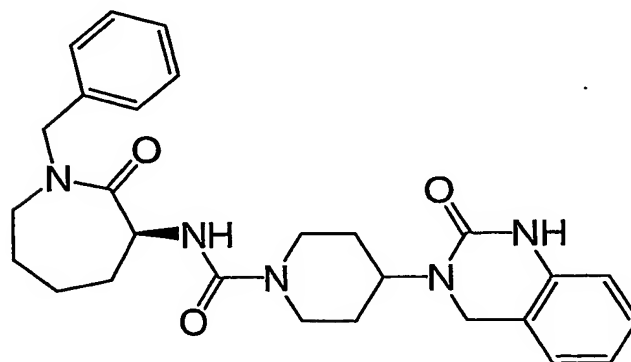
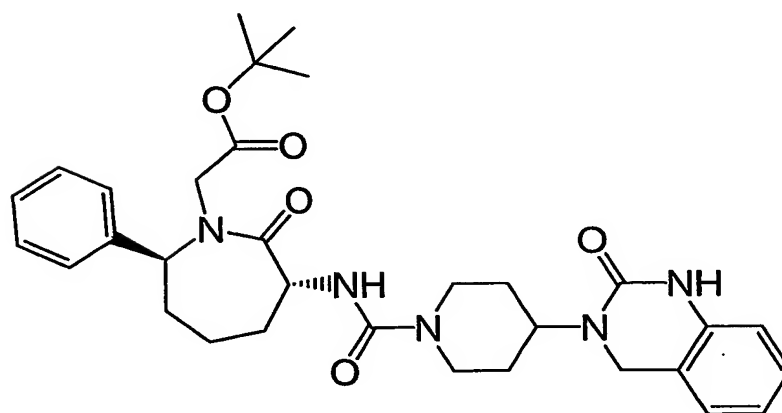
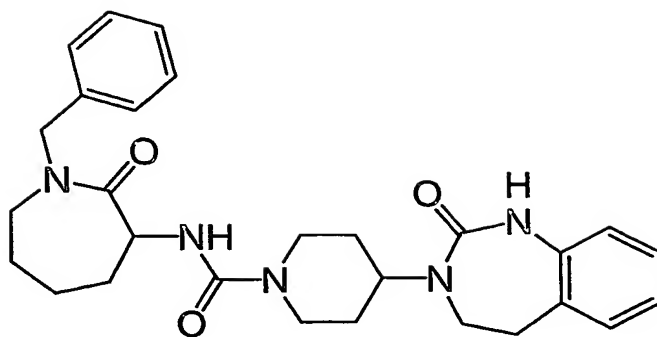
- p is 0 to  $2q+1$ , for a substituent with q carbons;
- m is 0, 1 or 2;
- n is 0 or 1;
- s is 1, 2 or 3;

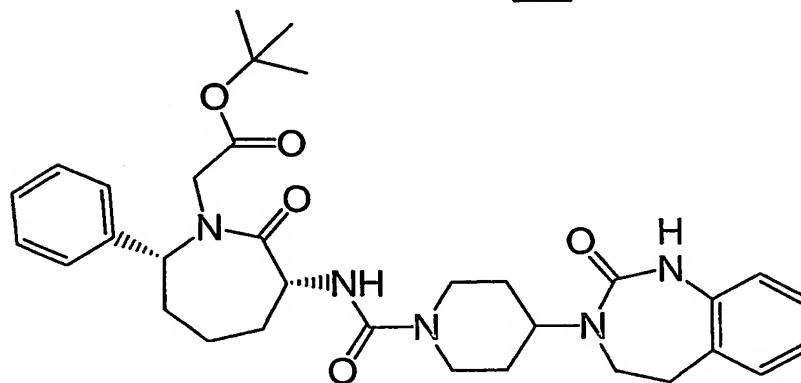
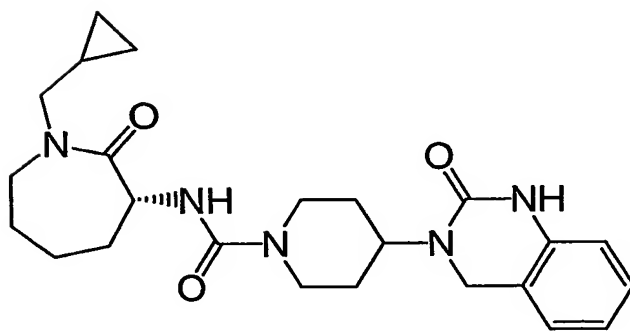
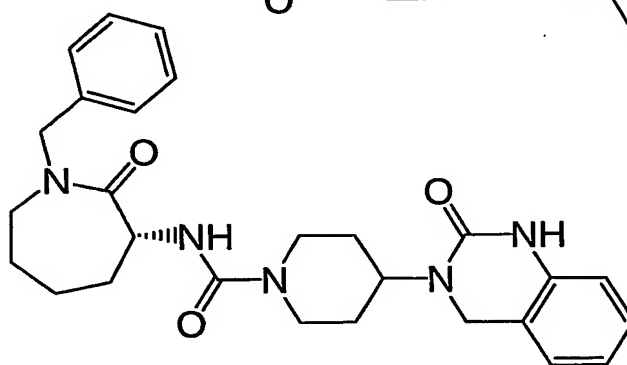
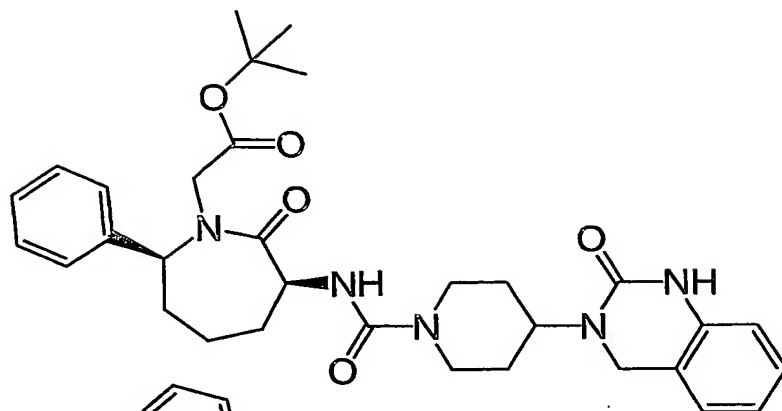
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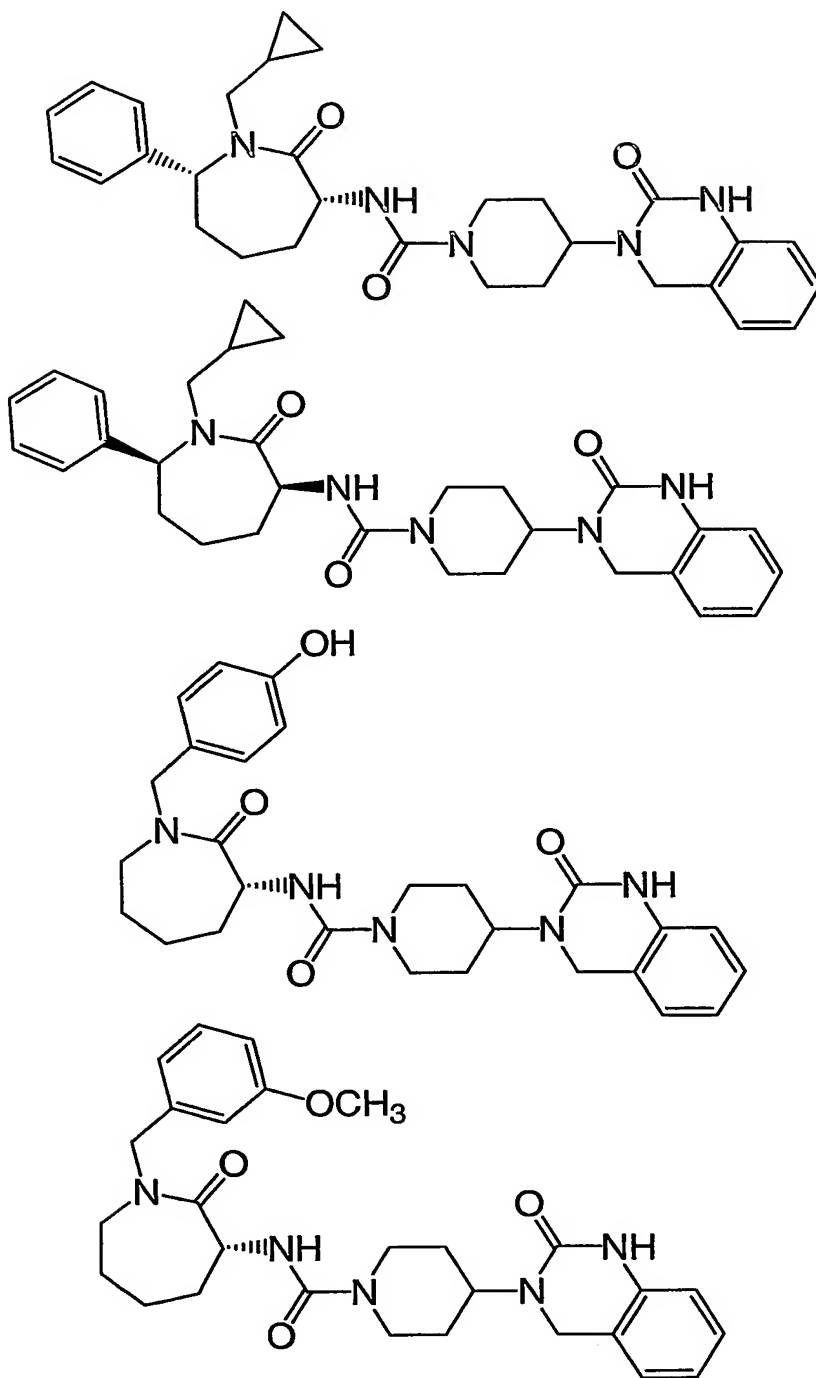
and pharmaceutically acceptable salts and individual diastereomers thereof.

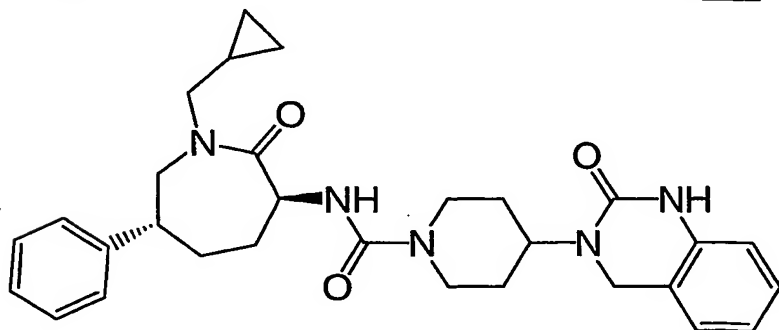
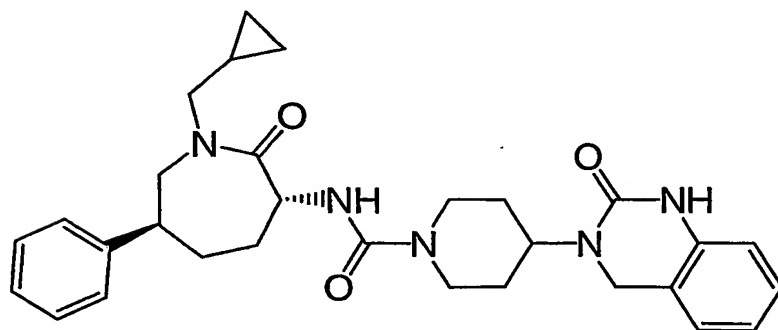
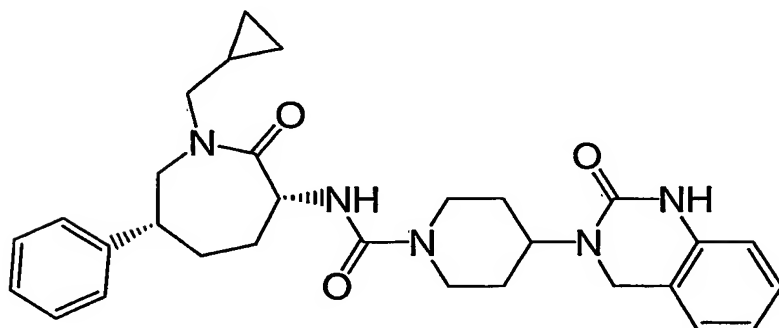
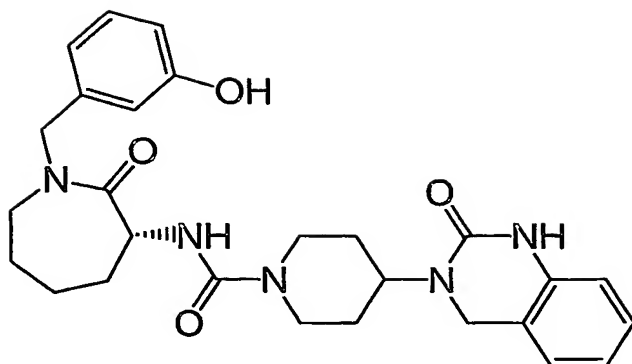
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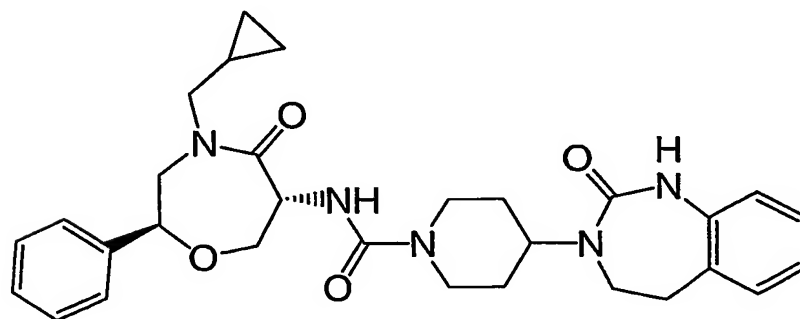
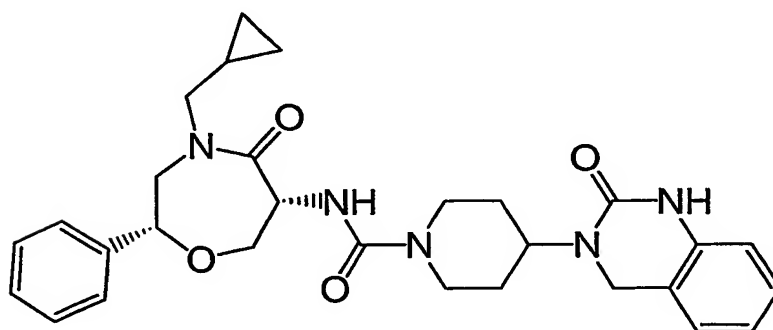
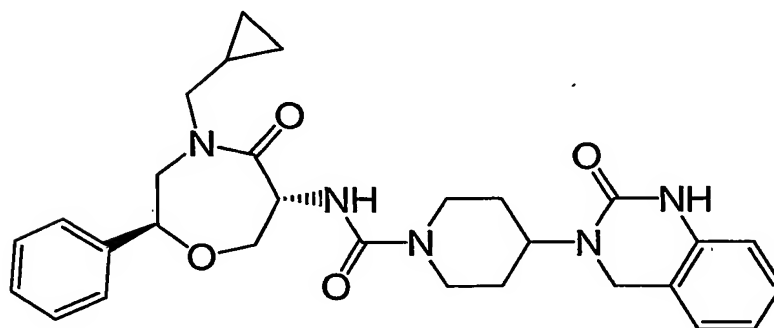
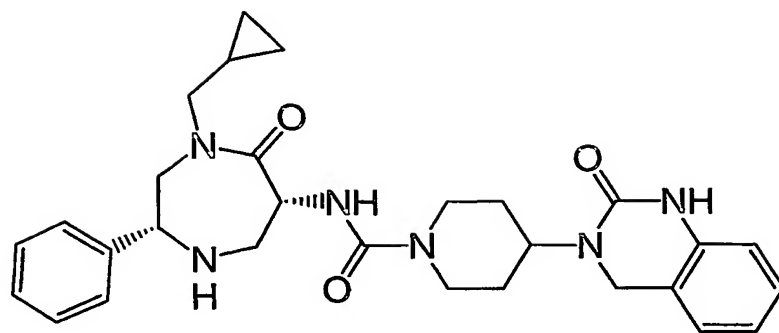


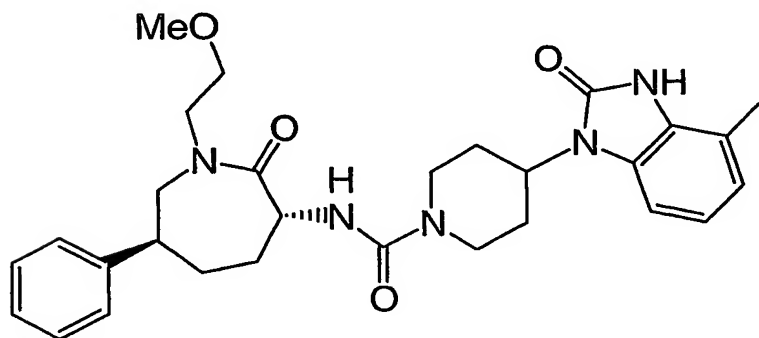
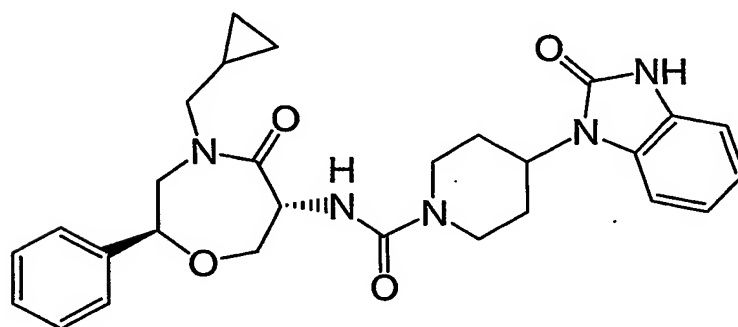
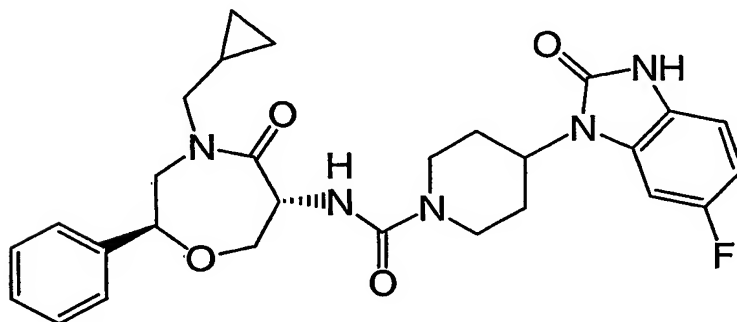
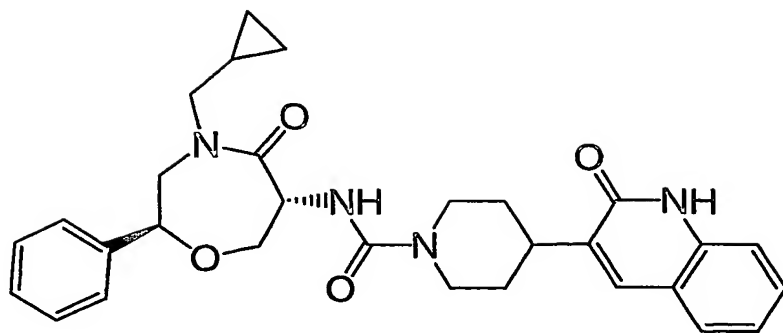




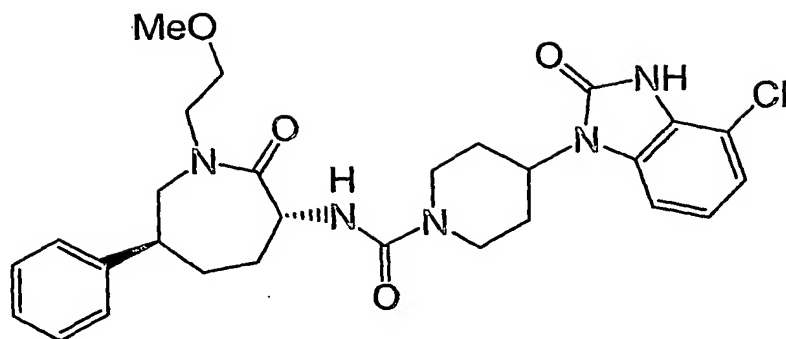












5 and pharmaceutically acceptable salts and individual diastereomers thereof.

21. A pharmaceutical composition which comprises an inert carrier and the compound of Claim 1.

10 22. The use of the compound of Claim 1 for the preparation of a medicament useful in the treatment of headache, migraine or cluster headache.

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